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STUDY CARRELS

—
DESIGNS FOR
INDEPENDENT
STUDY SPACE
—

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Design and drawings by John Baynon / Photo by George Zimbel

STUDY CARRELS:

DESIGNS FOR INDEPENDENT STUDY SPACE

Across the country schools are answering the demand for individualized student instruction with action rather than talk. They are planning new kinds of school-houses—schools with less area in classrooms and more area in libraries and other individual study spaces. These schools require new kinds of furniture designed primarily to give a degree of privacy to the student rather than providing optimum control to the teacher as we have done in the past. For this reason the carrel, heretofore used almost exclusively by colleges and graduate schools, is finding its way to secondary and even to our elementary schools.

Most of the schools moving into these advanced programs are changing from typical “eggcrate” school architecture and demanding fresh solutions from their architects. But change in furniture is coming more slowly than in architecture; primarily because educators have not been as specific as they might have been in out-



lining requirements. Recently a number of schools have committed their students to a high proportion of independent work and have of necessity faced up to the problem of designing new furniture. Obviously different schools will have different requirements. In one place a carrel might be the student's "home base"—exclusively his, complete with lockable storage space for his books and coat. In another school the carrel will be designed primarily for students using teaching machines and portable audio-visual equipment. Some schools want carrels complete with built-in television, two-way communications, and blinking signal lights, while in others a carrel will be only a private space to study in a library.

The purpose of this sketch book is to show many concepts of carrels of all types from the simple to the sophisticated. Our intent is that these ideas will be taken and used both by individual school districts and by manufacturers.

BASIC DIMENSIONS

The basic requirement for the simplest of carrels is that it provide a suitable work space with visual privacy. While opinions on what is adequate will vary, we can give some general dimensional guidelines.

- *The working surface should, minimally, be 2 feet deep and include about 6 square feet of working surface.*
- *The height of the visual "blindness" should be slightly above the eye level of the seated student. This is approximately 20 inches above desk height.*
- *If the carrel has a 2 foot by 3 foot rectilinear desk the side barriers should extend, toward the student, 1 foot behind the edge of the table. If the table is not rectilinear the designer will have to use his own judgment to determine proper dimensions.*
- *Bookshelves should generally be 10 inches deep.*
- *It should be possible for two people to sit at one carrel when necessary; either two students or a student and teacher.*

UTILITIES AND GROUPING

The minimum carrel will usually require an individual light to counteract shadows cast by the blinders and several 110V outlets for portable machines.

These would include portable television sets, teaching machines, micro-film readers, tape recorders, small movie projectors, film strip projectors and slide viewers. Schools which have closed circuit television will require a special jack built into the carrel. Those with advanced ideas for using electronics will want a multi-channel audio system or possibly a telephone dial system with a microphone. Carrels should be designed to function either if all of this equipment is installed immediately or if it is to be installed later.

There is always a problem in getting these utilities for the carrel connected into the building's "nerve" system. If the carrels can be placed next to a wall, getting the wires connected to them is comparatively simple and inexpensive. This, of course limits the freedom to change carrel locations. If total flexibility is the objective, perhaps units that connect into the floor are preferable. In any event carrels should be suited to both kinds of installations. The connections between carrel and building should be of the plug-in type.

COMPONENT CONSTRUCTION

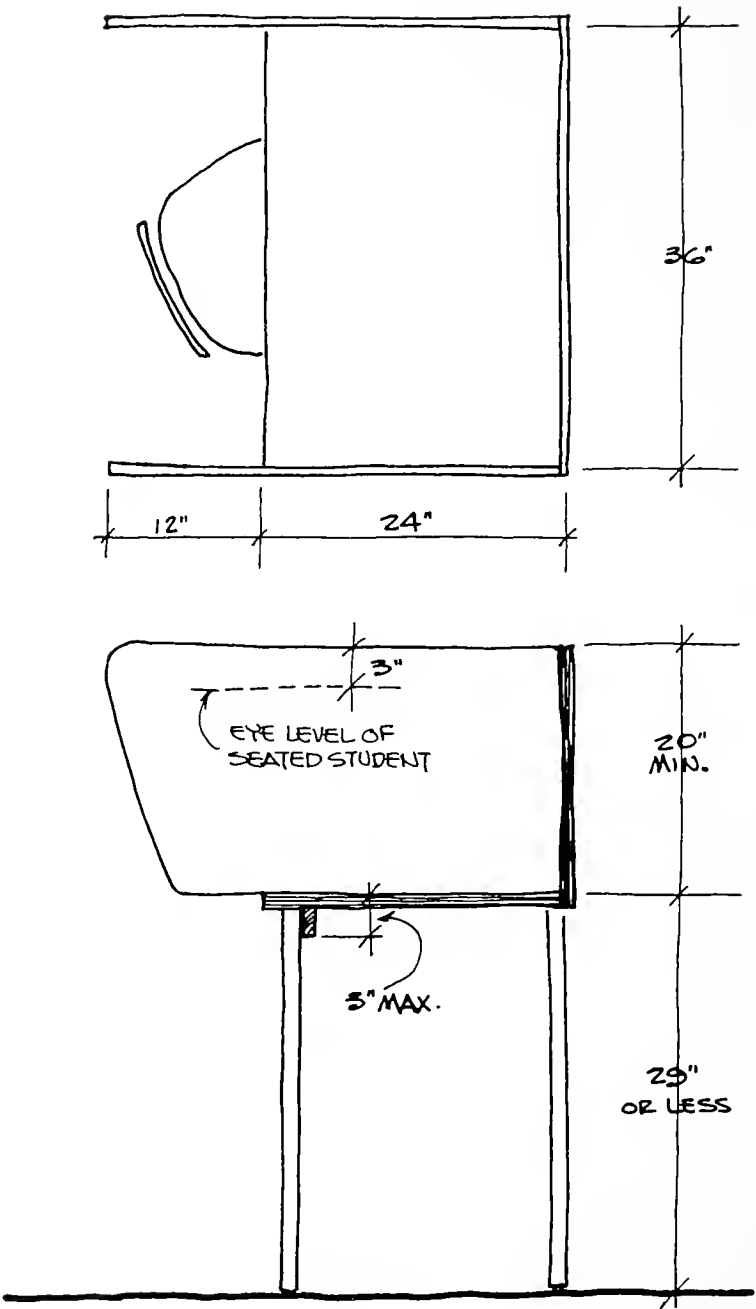
Since almost all carrels have similar basic requirements, cost can be lowered by utilizing component construction. The basic elements are the desk top, visual barriers, and utilities chase. Additional optional fixtures are as follows:

- Open bookshelf
- Coat hook
- Desk light
- Control panel
- Lockable book storage
- Coat locker
- Under-desk storage

A carrel with only the basic units would probably be the most suitable type for a library. With all the accessories the same basic unit could even be used for a teacher's office. Since components can be added later, a school can start with a minimum amount of equipment and add to the units as their program becomes more advanced. Also, the carrels can be completely dismounted and reassembled in a different fashion or a new location if educational changes so demand.

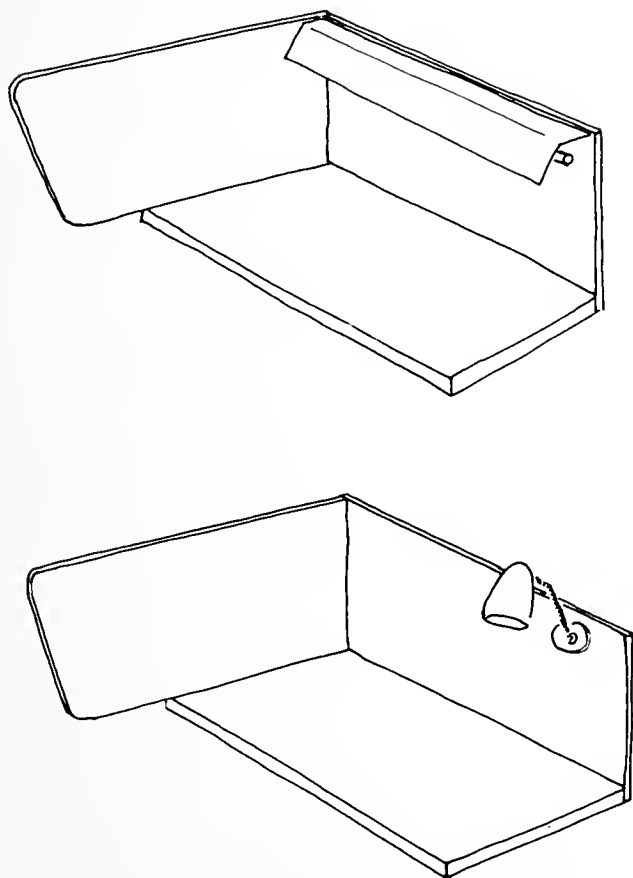
**VISUAL PRIVACY
CRITERIA**

Schools which have experimented with their own carrel designs have found that the dimensions shown in this diagram give students enough enclosure so that they are not easily disturbed by other activities going on in the same room. Less enclosure than this will result in student distractions.



LIGHTING

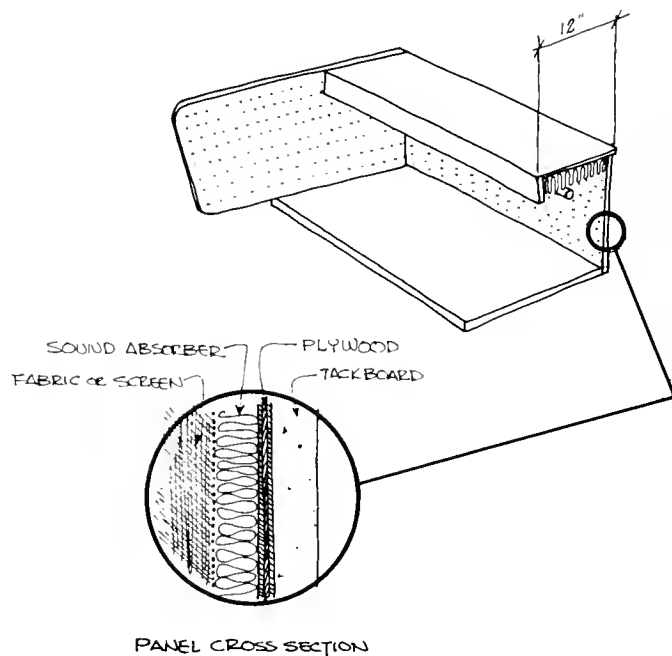
The principal light source should be from the ceiling. However, side panels and bookshelves will tend to cast shadows across the working surface, and a supplementary individual light such as shown here will usually be needed to counter these shadows.



ACOUSTICS

Since many carrels will be used primarily for teaching machines and audio-visual devices, acoustics deserve special attention. Side walls filled with sound-absorbent material will prevent some of the sound from reflecting out into the room. A 12-inch deep top with absorbent material on the underside will also help to localize noise.

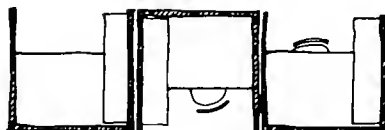
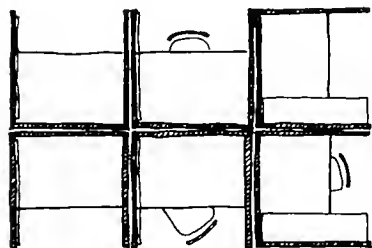
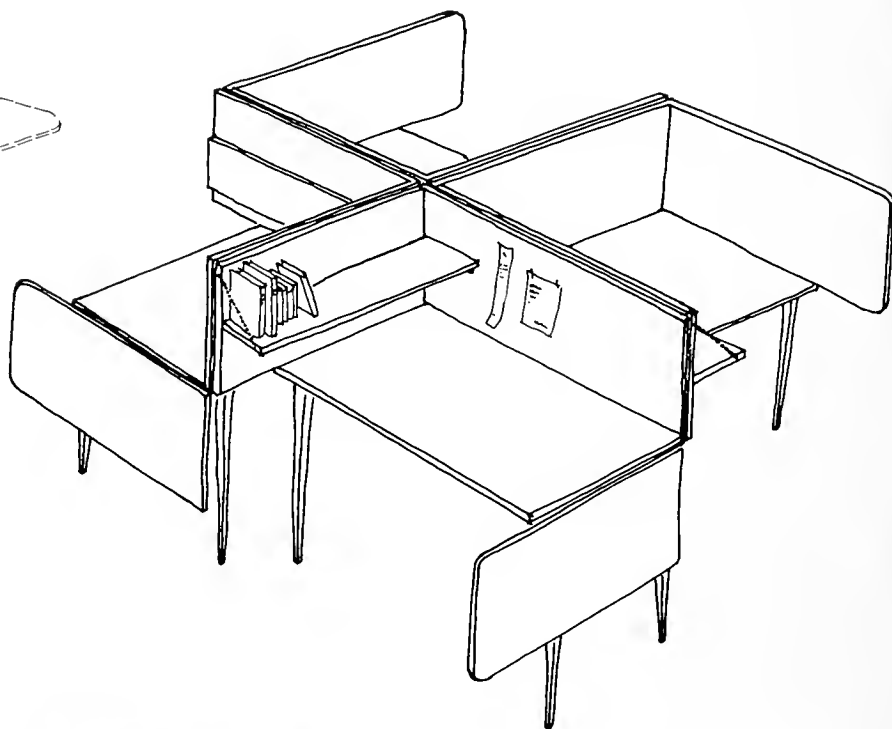
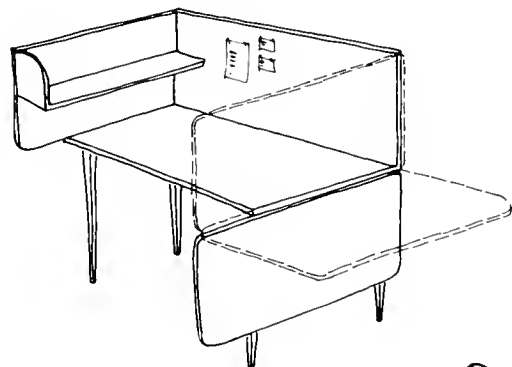
The room as well as the carrel should be acoustically treated. A sound-absorbent ceiling and a carpeted floor will reduce reverberation time and thereby keep much of the noise from being offensive to faculty or students.



1

A BASIC CARREL

This carrel is designed for general use in a library or study center. One side is hinged to enable the student to expand his work space when necessary. Three possible groupings are shown.

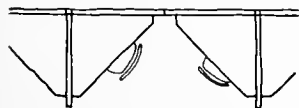
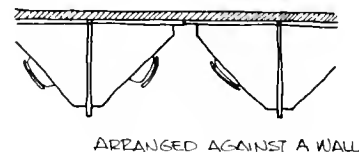
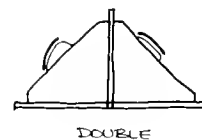
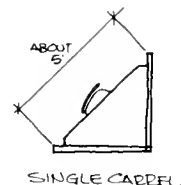
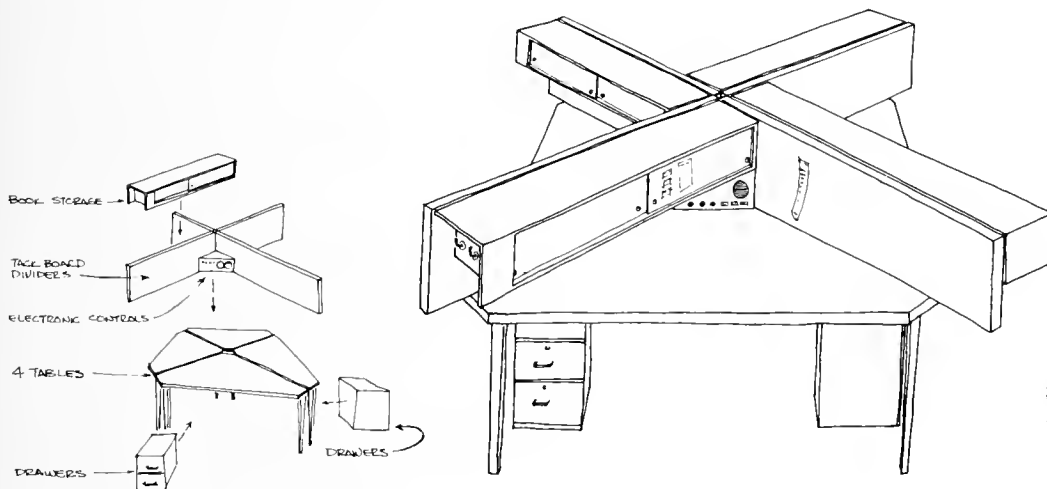


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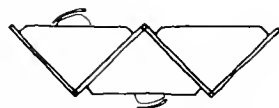
USING ADDITIVE COMPONENTS

Four tables with various attachments make up this cluster of four study spaces. With table and dividers only, this design would be well suited to library use. With bookshelves and control panel it could be used as a student's permanent "home base" and with the drawers hung underneath it would satisfy requirements for most teacher offices. A school could begin with the basic table units and add attachments as a changing program may require.

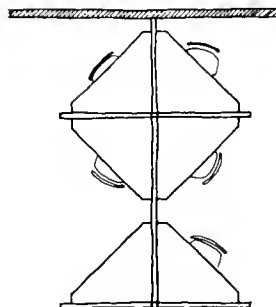
A wide variety of arrangements is possible.



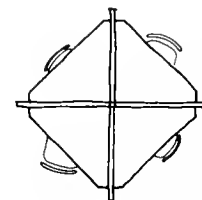
GROUPING OF 4 PEOPLE



LINEAR PATTERN



PENINSULA ARRANGEMENT



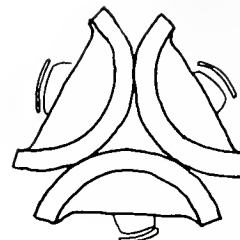
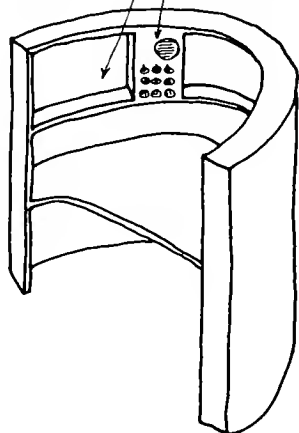
CLUSTER OF 4 CARRELS

3

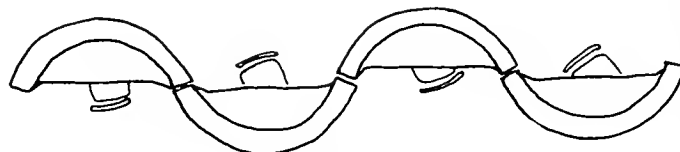
BARREL CARREL

The self-supporting segment of a cylinder provides the student with maximum privacy and generous shelf space. Its shape also makes a clean, uncluttered design which lends itself well to creating group alcoves for students who are sharing in a project or for teacher teams.

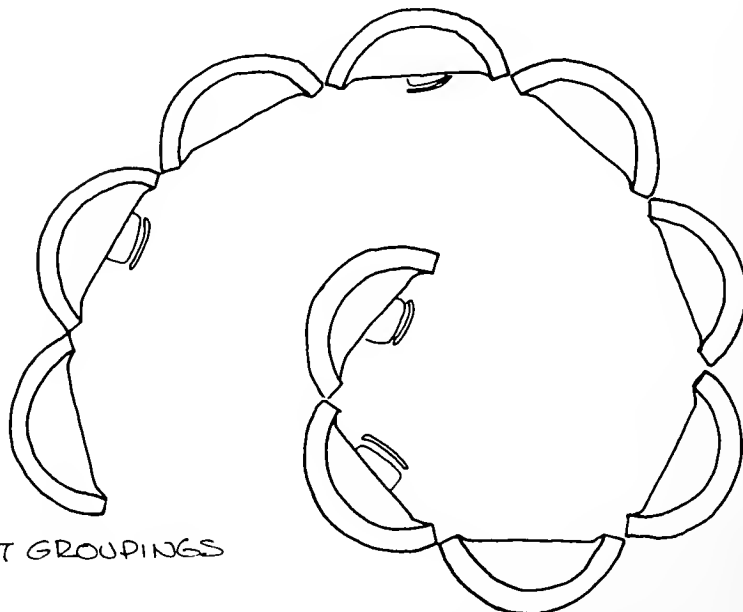
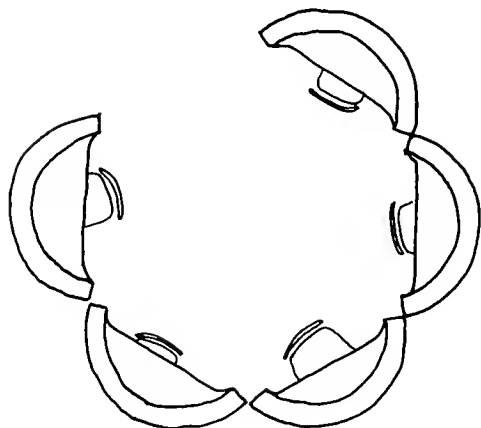
BOOKSHELVES ELECTRONIC CONTROLS



CLUSTER OF 3



SERPENTINE

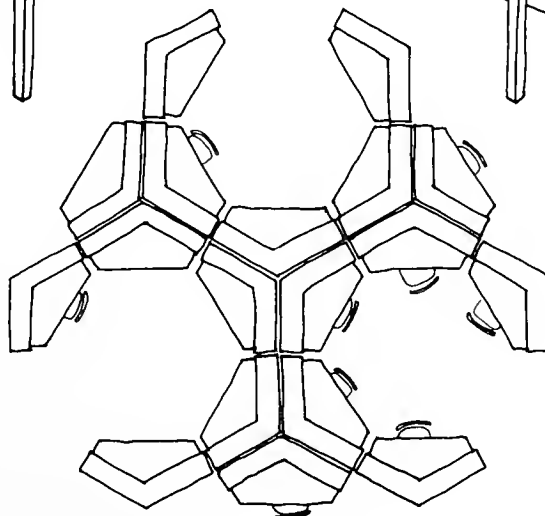
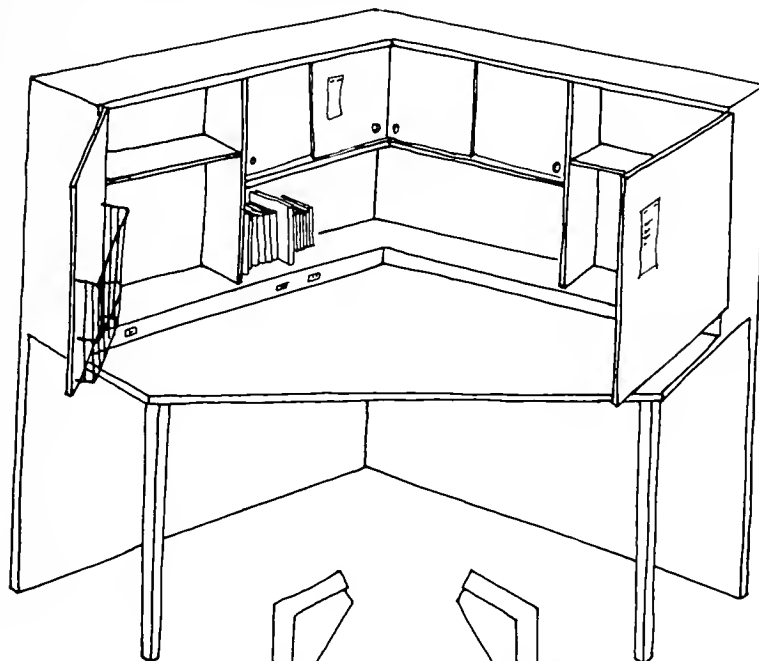


STUDENT GROUPINGS

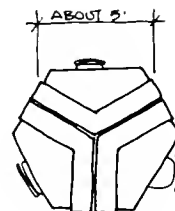
4

ONE THAT CLUSTERS

Similar to the previous design, the basic support for this unit is its enclosing panels. Privacy is afforded by opening the doors. Materials and books are made available by the same action. Again, the geometry lends itself well to creating groupings of students. Clusters of three carrels are possible too.



STUDENT
GROUPINGS



CLUSTER OF 3

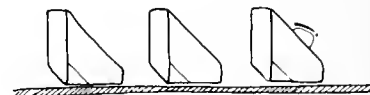
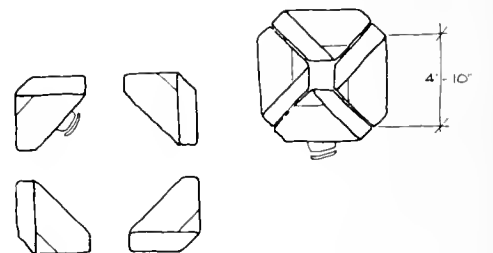
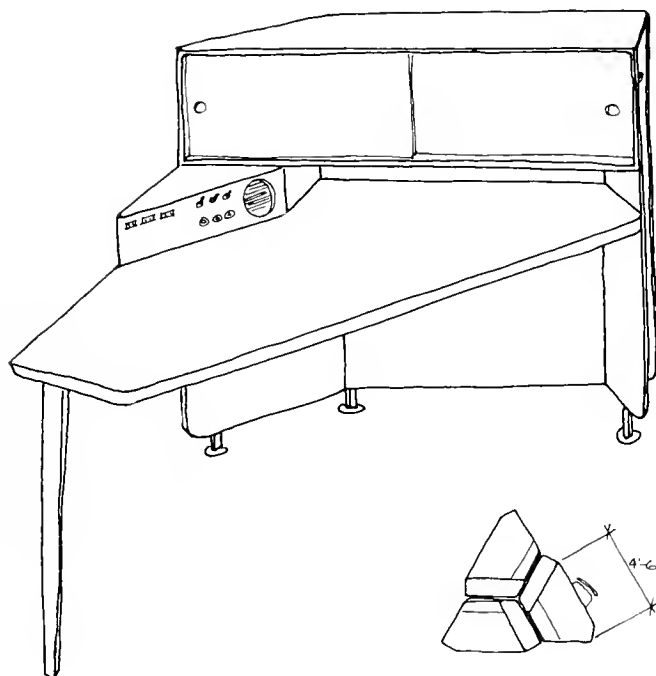
5

A HOME BASE

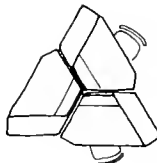
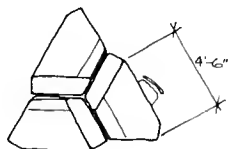
Designed for a school which will have a private carrel for every student, this carrel includes a limited amount of electronics to help the teacher keep abreast of each student's progress. There is a place for the student to hang his coat and a lockable bookshelf.

Two proposals have been made for this design; one based on 60° angles and the other based on 45° .

Designed by Richard Reinemon, A.I.D.,
for the School Planning Laboratory



BASED ON 45°



BASED ON 60°

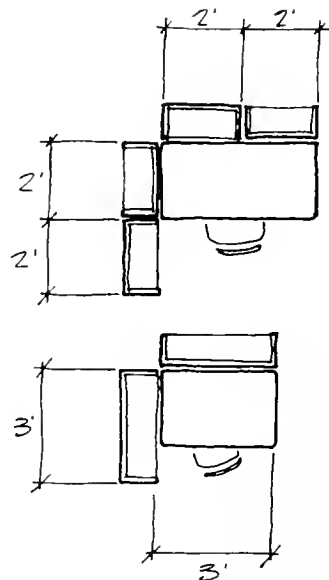
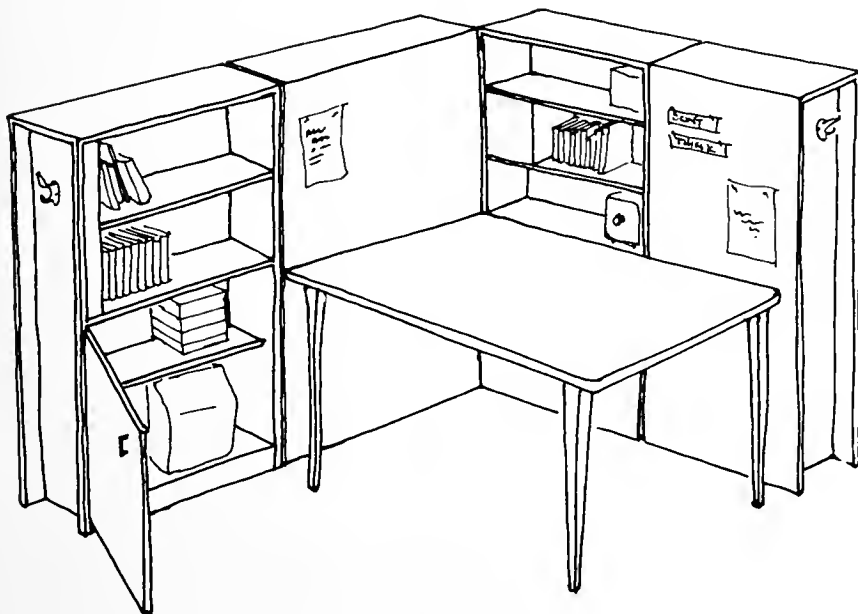
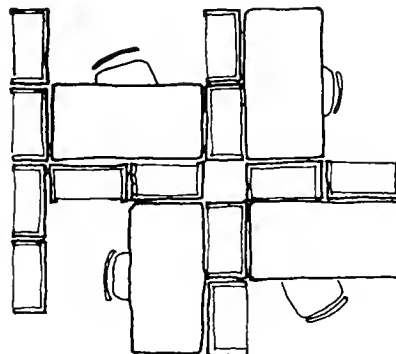


6

STUDY SPACE MADE UP OF STANDARD LIBRARY FURNITURE

Standard bookshelves and tables make up this arrangement which is designed primarily for library use. The idea can be exploited with tables either 3 ft. or 4 ft. wide.

From a design by Hobart Wogener, A.I.A.,
for the Educational Facilities Laboratories

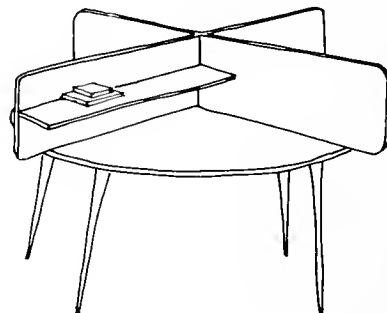
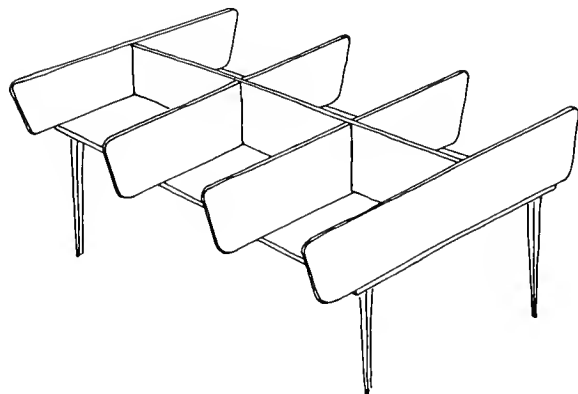
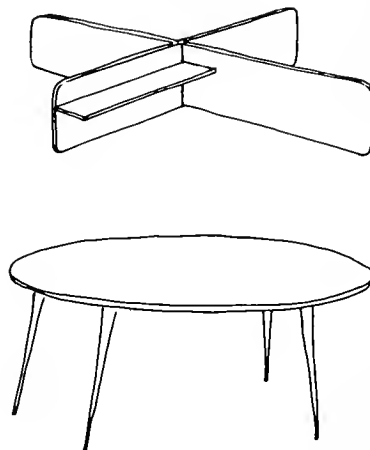
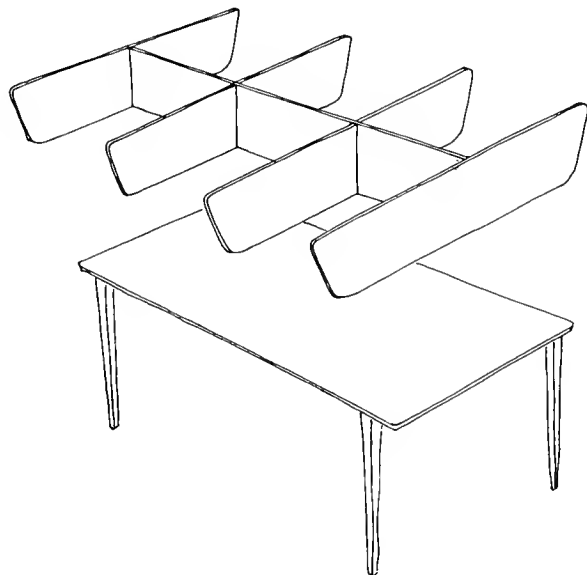


7

REMODELING

Oftentimes schools will want to modify their existing school buildings to fit newer educational concepts. Furniture too will need modernization. Dividers can be added to standard library tables and make them into banks or clusters of carrels.

From a design by Hobart Wagener, A.I.A., and Ralph E. Ellsworth
for the Educational Facilities Laboratories

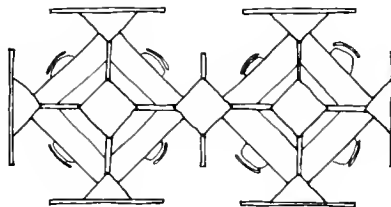
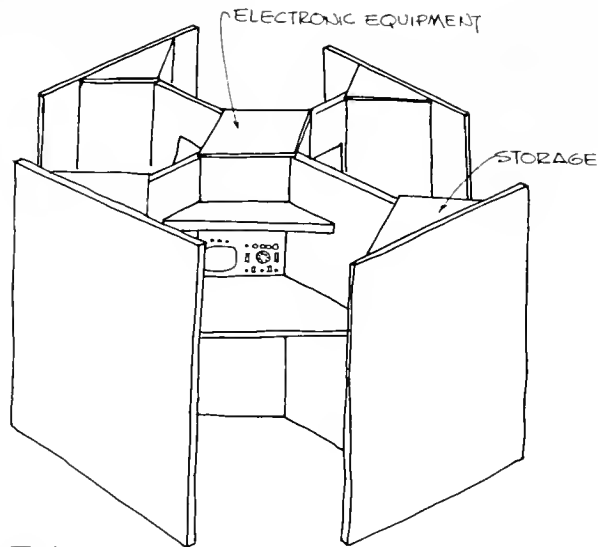


8

FOR BUILT-IN ELECTRONICS

The electronic equipment built into this carrel includes a TV receiver, a microphone, telephone dial, speakers and signal lights. Two students are assigned to each carrel which includes a place to store books and coats.

Meathe, Kessler and Associates, Inc., Architects
Sal Carnberg, Consultant
for Grand Valley State College, Michigan



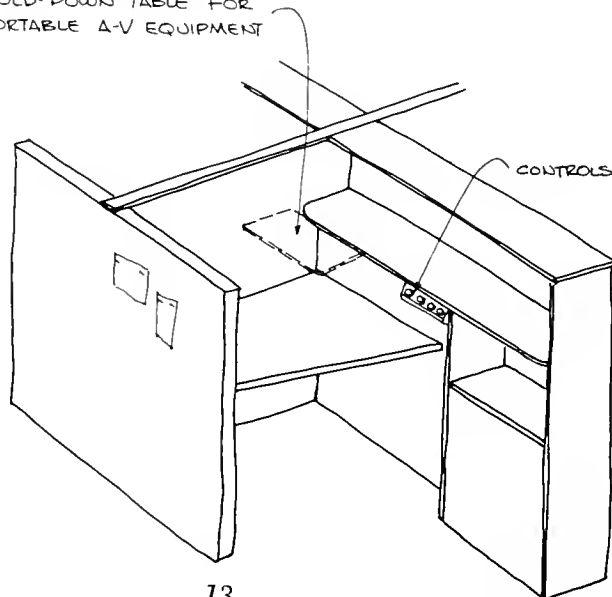
9

FOR PORTABLE EQUIPMENT

Taking an opposite approach, this design assumes that most teaching machines will be portable and can be better utilized if brought into the carrel only when in use. Most of the inside surfaces are sound absorbing.

Designed by Clyde Hufbauer, A.I.A., and Warren Vogt
for Rich-Mar Union School District, California

FOLD-DOWN TABLE FOR
PORTABLE A-V EQUIPMENT

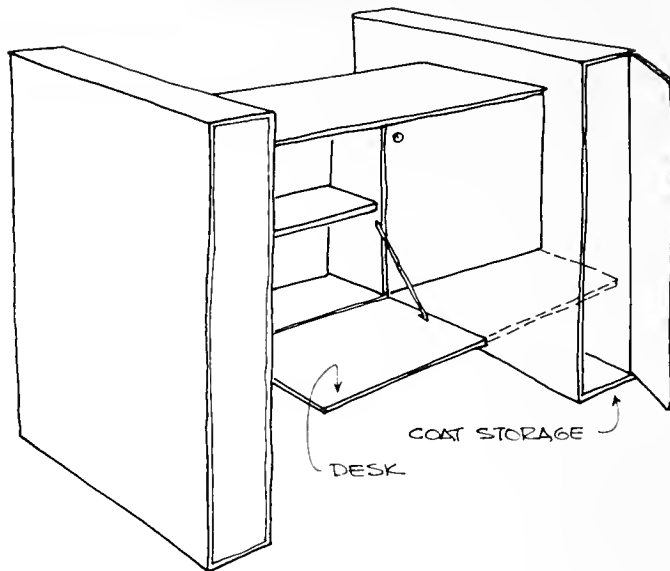


10

REPLACEMENT FOR LOCKERS

This single unit holds coats and supplies for four students. The desk top is dual purpose, doubling as the locker door.

Designed by Brunswick Corporation
School Equipment Division
for Mount Kisco, New York Schools

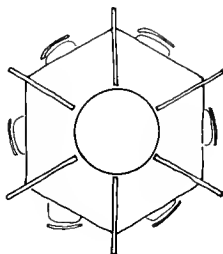


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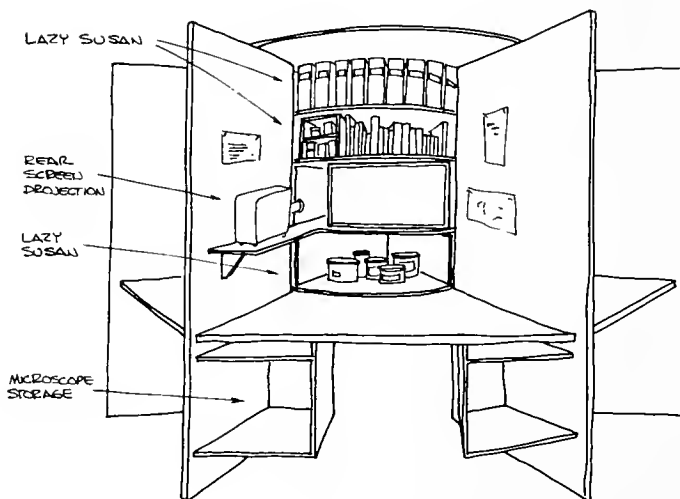
A BIOLOGY CARREL

This six-booth unit is planned for biology projects. Lazy Susans supply students with a variety of specimens, reading materials and films.

Designed by Robert Lewis,
Science Teaching Consultant



SEATING PLAN



IN SUMMARY

We do not pretend to have all the answers to the design of carrels in this report. Naturally there will be other ideas and perhaps better ones than these. What we do hope is that these sketches will plant some ideas from which other improved designs will develop.

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